Walton & Lonsbury Superfund Site

Attleboro, Massachusetts

Public Informational Meeting
Proposed Cleanup Plan

Attleboro Public Library

July 31, 2019

Project Team

EPA

- Ethan Finkel – Remedial Project Manager
- Sarah White – Community Involvement Coordinator
- Dan Keefe – Section Chief

MassDEP

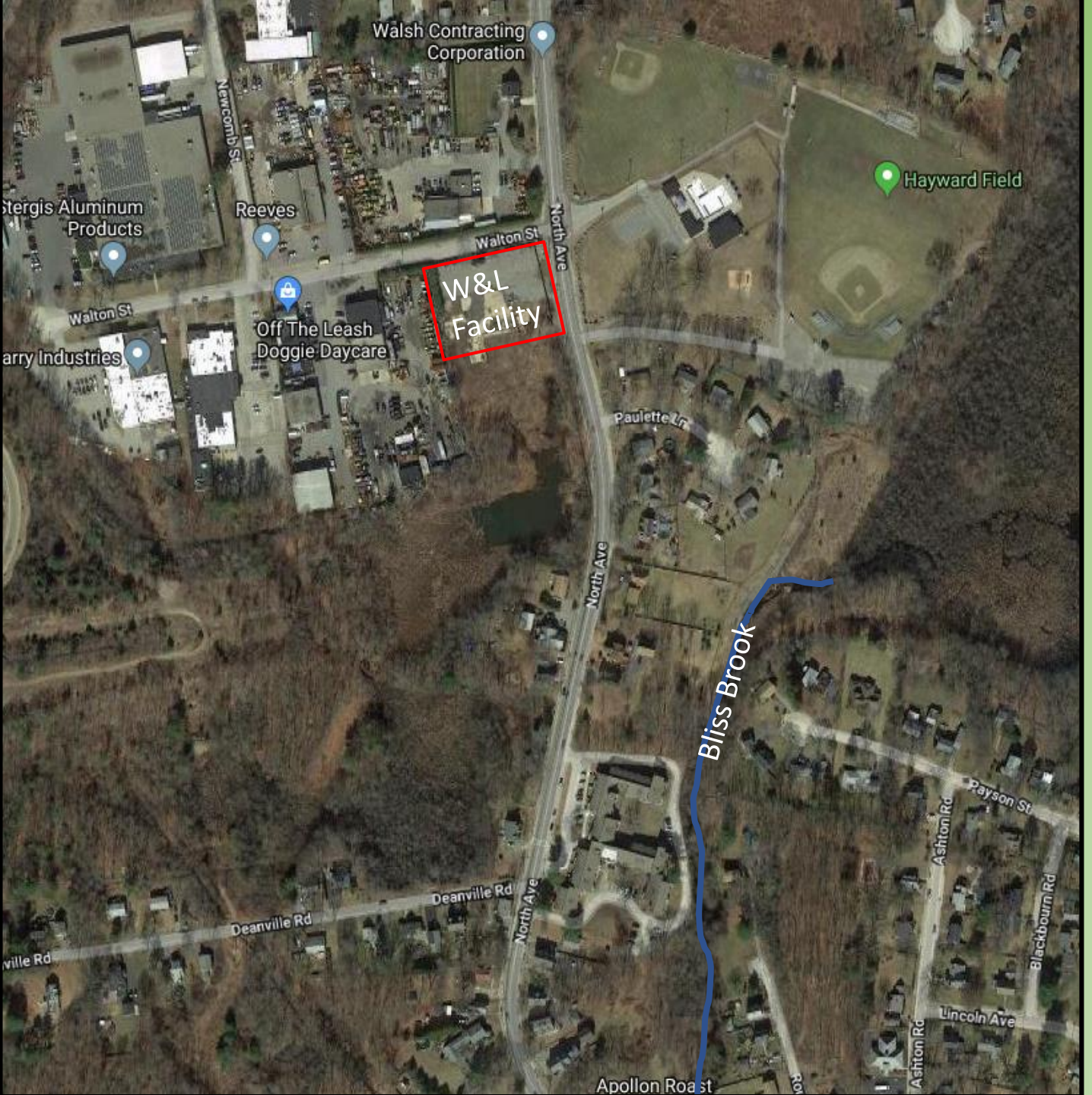
- David Buckley – State Project Manager

AECOM (EPA Contractor)

- Barbara Weir – Project Manager

Agenda

- Site History/Background
- EPA Removal Program
- Remedial Investigation
- Risk Assessment Summary
- Feasibility Study
- Proposed Cleanup Alternatives
- Next Steps
- Q&A



Site History/Background

Walton and Lonsbury (W&L) operated a chromium electroplating facility from 1940-2007

- Walton Street and industrial/commercial properties to the north
- Wetlands to the south
- North Avenue and residential properties to the east
- Industrial/commercial properties to the west

Waste management practices during years of operations:

- Direct discharge to abutting southern wetlands
- Surface impoundment and lagoon
- Underground and above-ground storage tanks
- Dry well

Resulted in contaminated soil, sediment, surface water, groundwater and indoor air

- Hexavalent and total chromium
- Volatile Organic Compounds (e.g., TCE, 1,1,1-TCA, PCE)
- Other metals (e.g., copper, lead, silver)
- Polycyclic Aromatic Hydrocarbons (PAHs)

EPA Removal Program

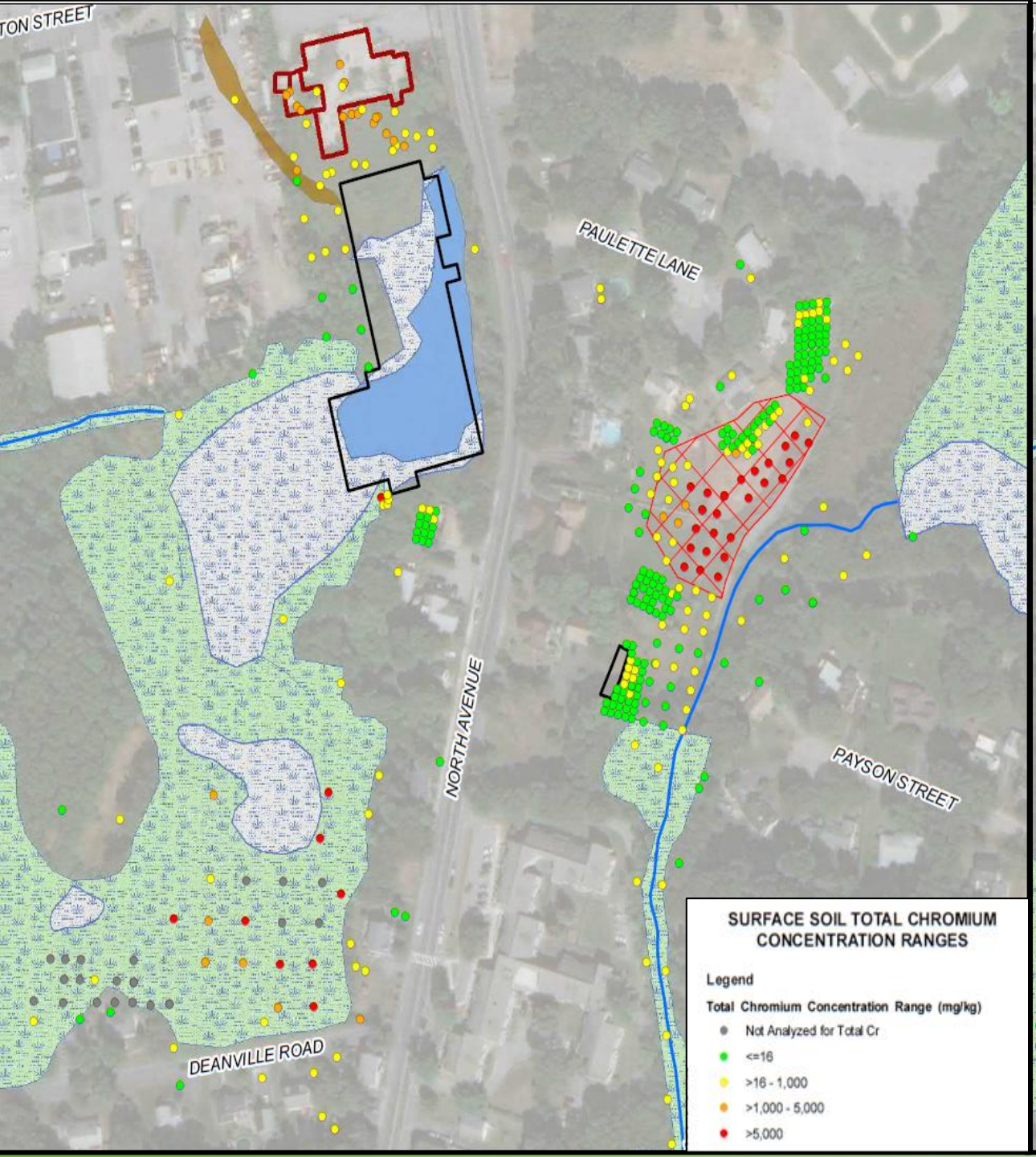
October 2010 – Time-critical removal action to mitigate ongoing human health exposure to impacted soil, sediments, and groundwater

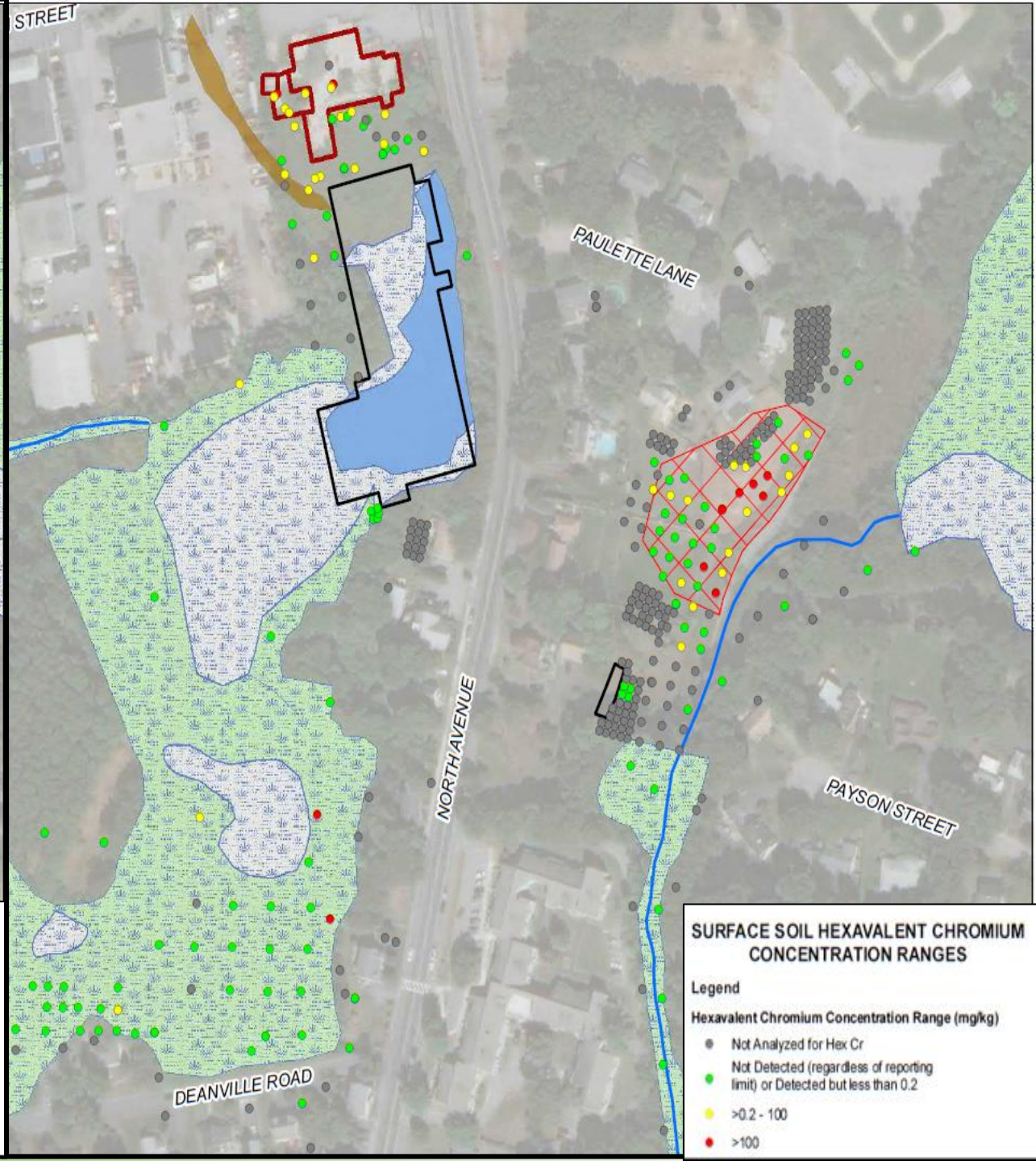
- Removal of facility buildings
- Excavation and off-site disposal of contaminated sediments from southern wetland
- Construction of engineered cover system adjacent to Bliss Brook and residential properties to isolate surficial soils, prevent groundwater upwelling
- Installation of permeable reactive barrier (PRB) with zero-valent iron (ZVI) to intercept groundwater plume and reduce hexavalent chromium to trivalent chromium

Remedial Investigation

- Five Phases (June 2014 – April 2018)
  - Soil, sediment, surface water, groundwater sampling
  - Bedrock well installation
  - Vapor intrusion study
  - Ecological toxicity testing
  - Treatability studies
  - Fine-fraction surface soil and IVBA lead analyses
  - Groundwater/surface water interactions at Bliss Brook

- Human Health Risk Assessment – evaluates who is at risk from what contaminant via which exposure route and mechanism
- Ecological Risk Assessment – evaluates risk to ecological receptors from a contaminant within an exposure area based on measurement endpoints


TON STREET
PAULETTE LANE
NORTH AVENUE
PAYSON STREET
DEANVILLE ROAD
SURFACE SOIL TOTAL CHROMIUM CONCENTRATION RANGES
Legend
Total Chromium Concentration Range (mg/kg)
Not Analyzed for Total Cr
<=16
>16 - 1,000
>1,000 - 5,000
>5,000


STREET
PAULETTE LANE
NORTH AVENUE
PAYSON STREET
DEANVILLE ROAD
SURFACE SOIL HEXAVALENT CHROMIUM CONCENTRATION RANGES
Legend
Hexavalent Chromium Concentration Range (mg/kg)
Not Analyzed for Hex Cr
Not Detected (regardless of reporting limit) or Detected but less than 0.2
>0.2 - 100
>100

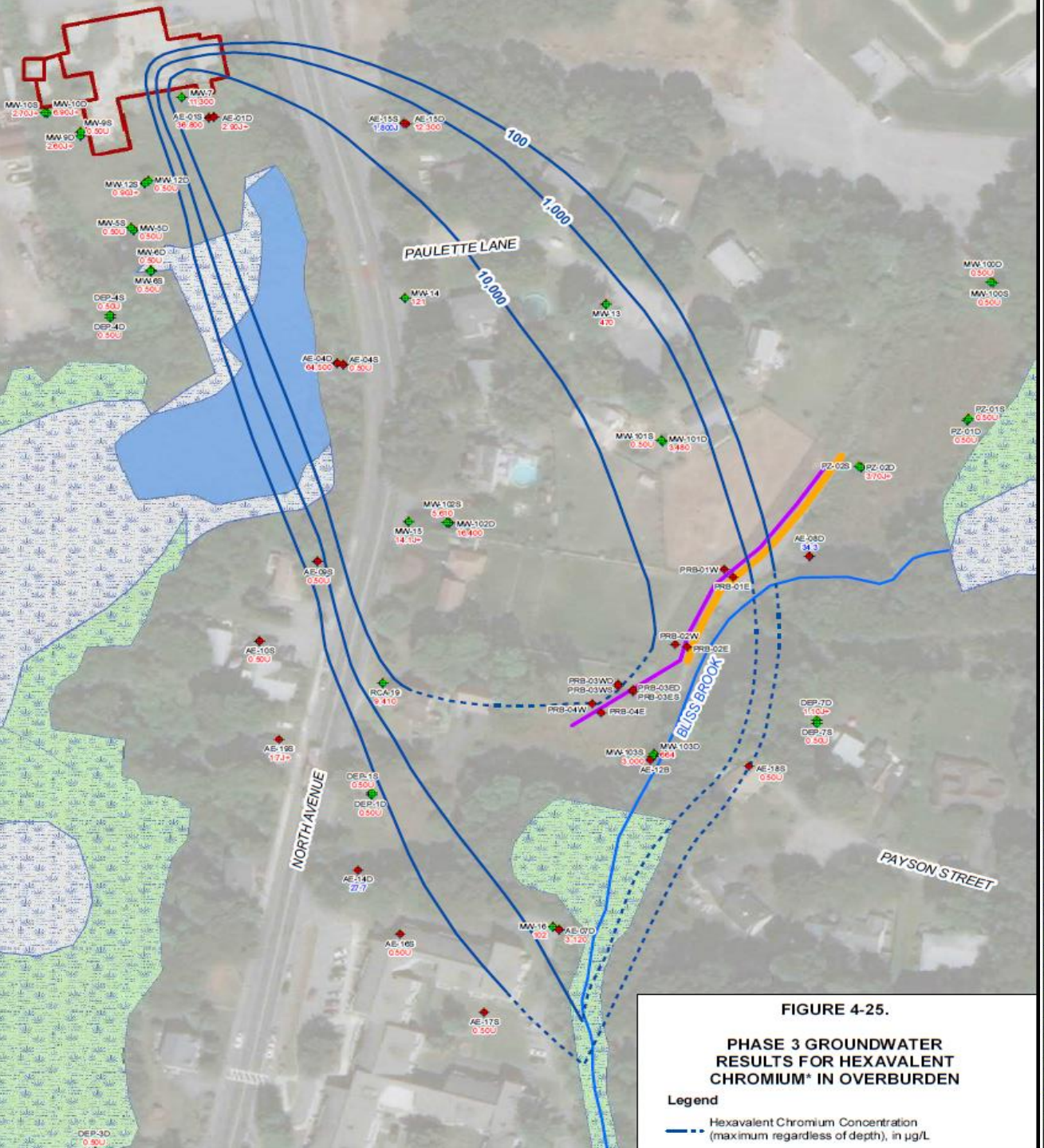


FIGURE 4-25.

PHASE 3 GROUNDWATER RESULTS FOR HEXAVALENT CHROMIUM* IN OVERBURDEN

Legend

Hexavalent Chromium Concentration (maximum regardless of depth), in µg/L

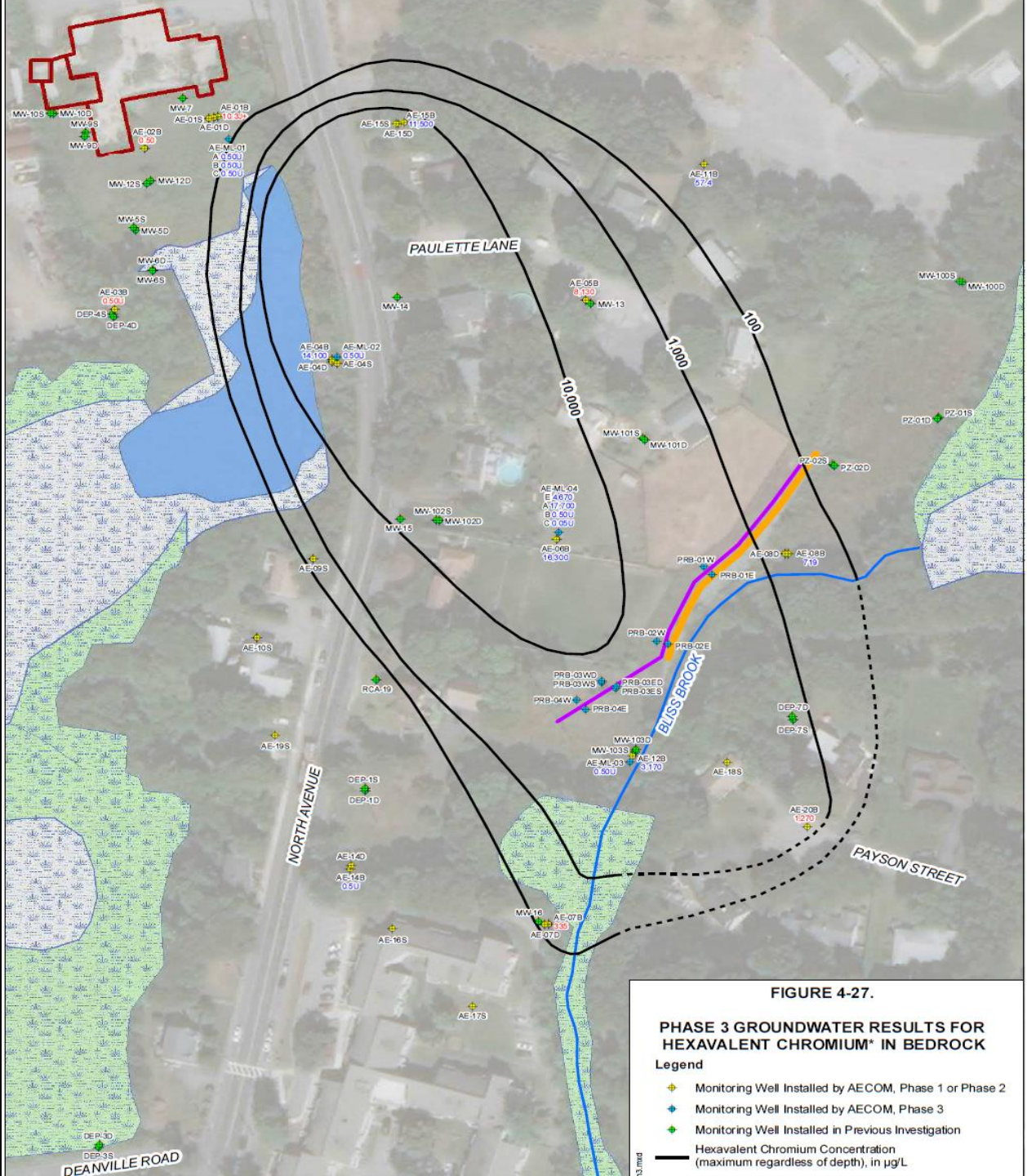


FIGURE 4-27.

PHASE 3 GROUNDWATER RESULTS FOR HEXAVALENT CHROMIUM* IN BEDROCK

Legend

Monitoring Well Installed by AECOM, Phase 1 or Phase 2

Monitoring Well Installed by AECOM, Phase 3

Monitoring Well Installed in Previous Investigation

Hexavalent Chromium Concentration (maximum regardless of depth), in µg/L

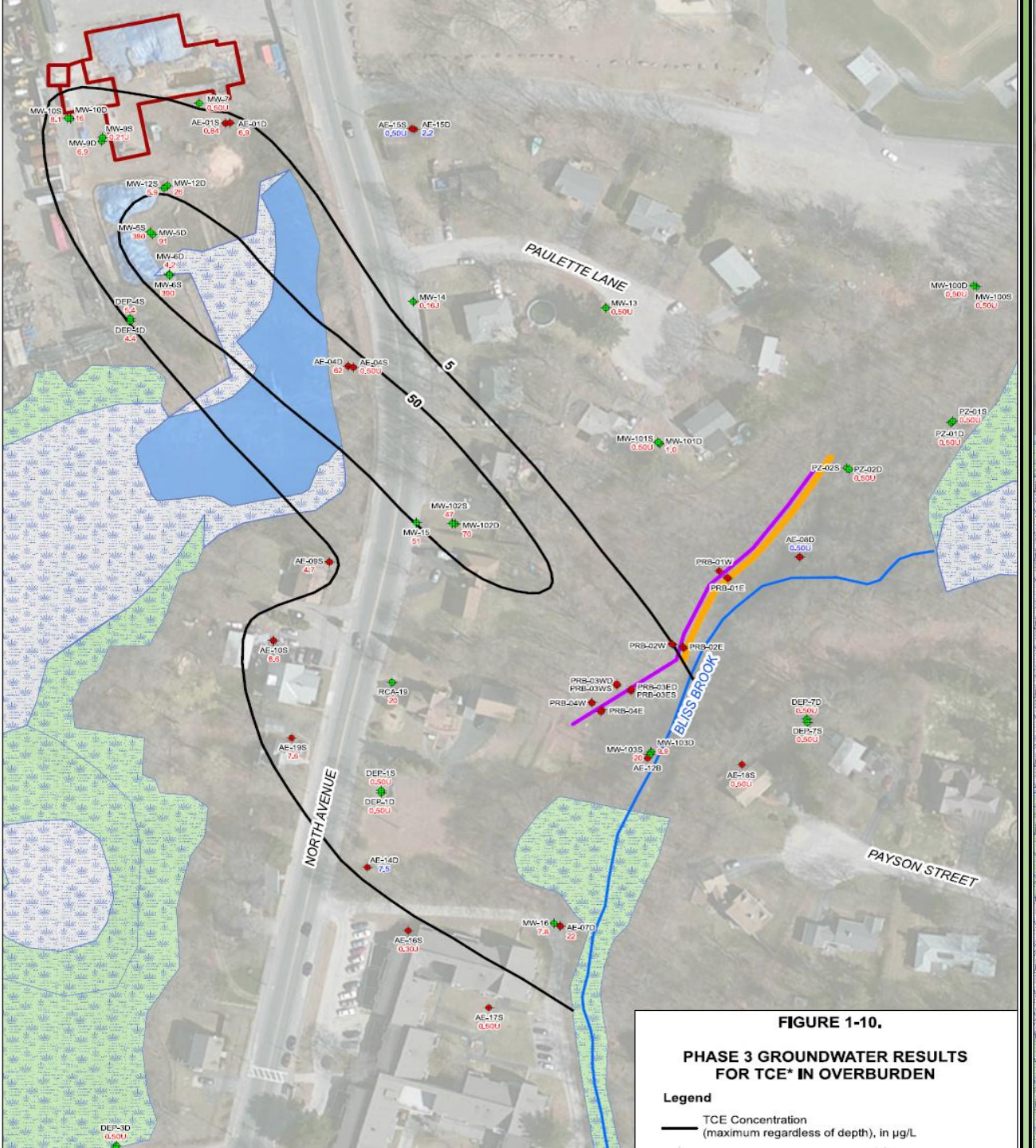


FIGURE 1-10.

PHASE 3 GROUNDWATER RESULTS FOR TCE* IN OVERBURDEN

Legend

TCE Concentration (maximum regardless of depth), in µg/L

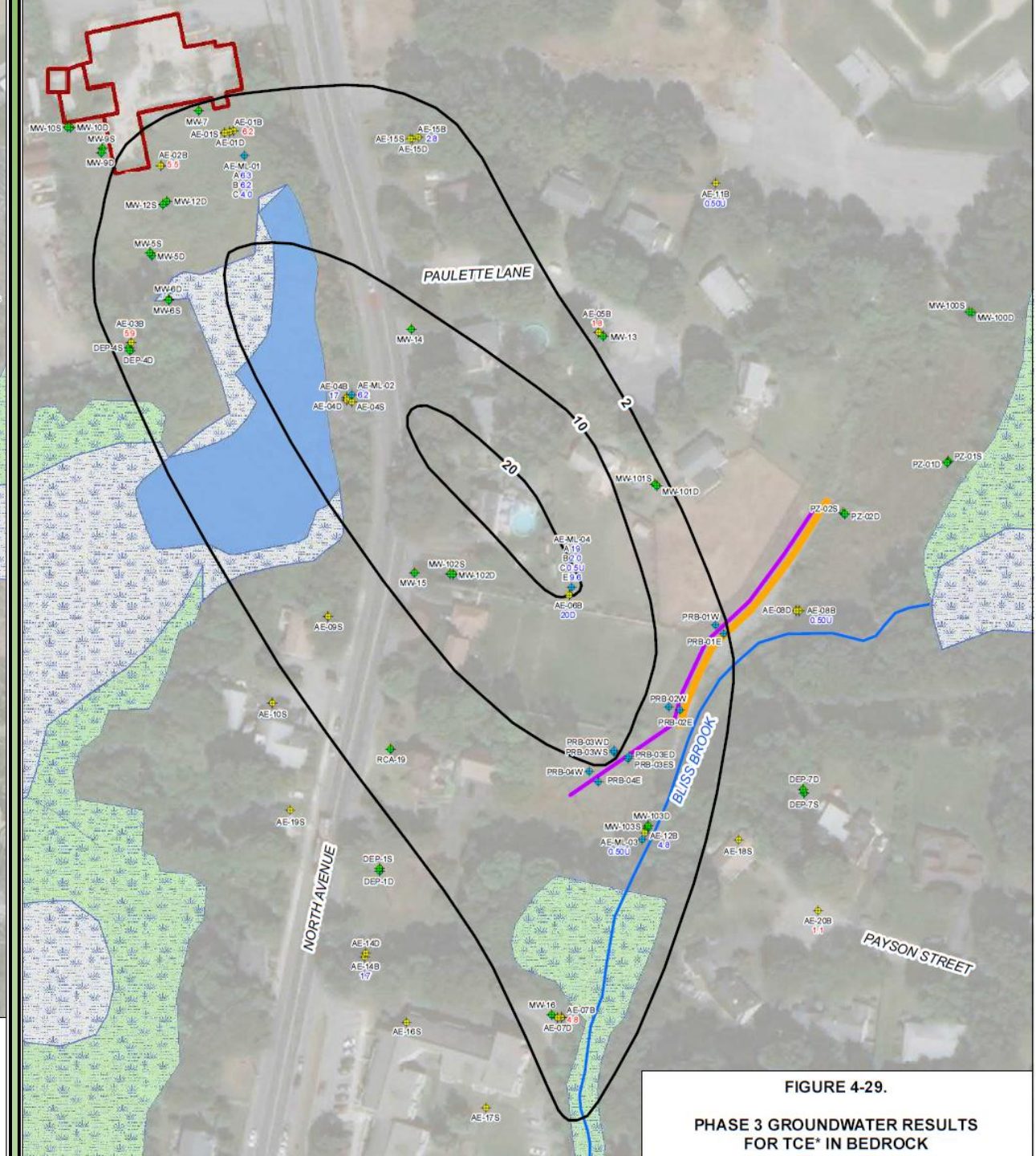


FIGURE 4-29.

PHASE 3 GROUNDWATER RESULTS FOR TCE* IN BEDROCK

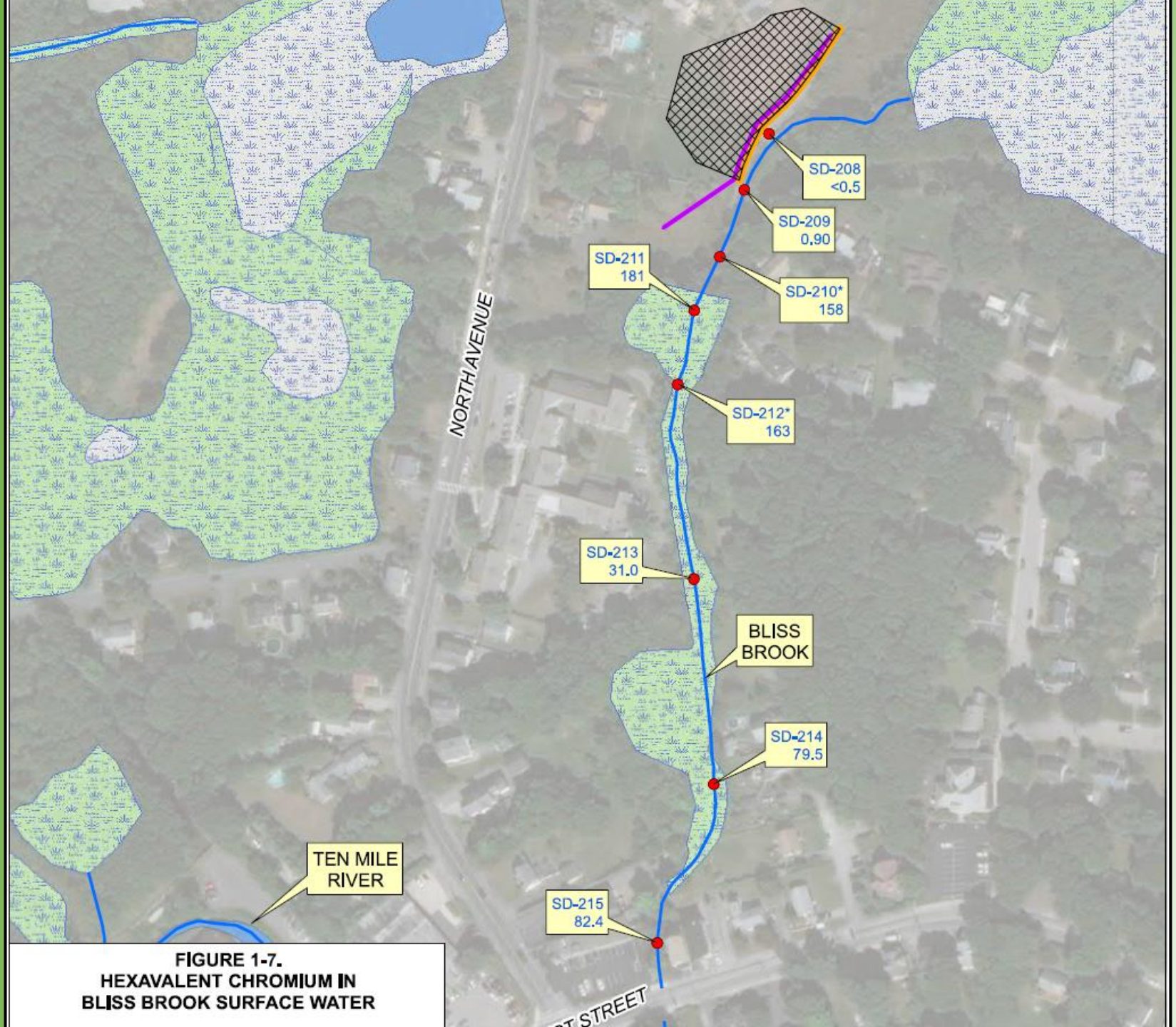
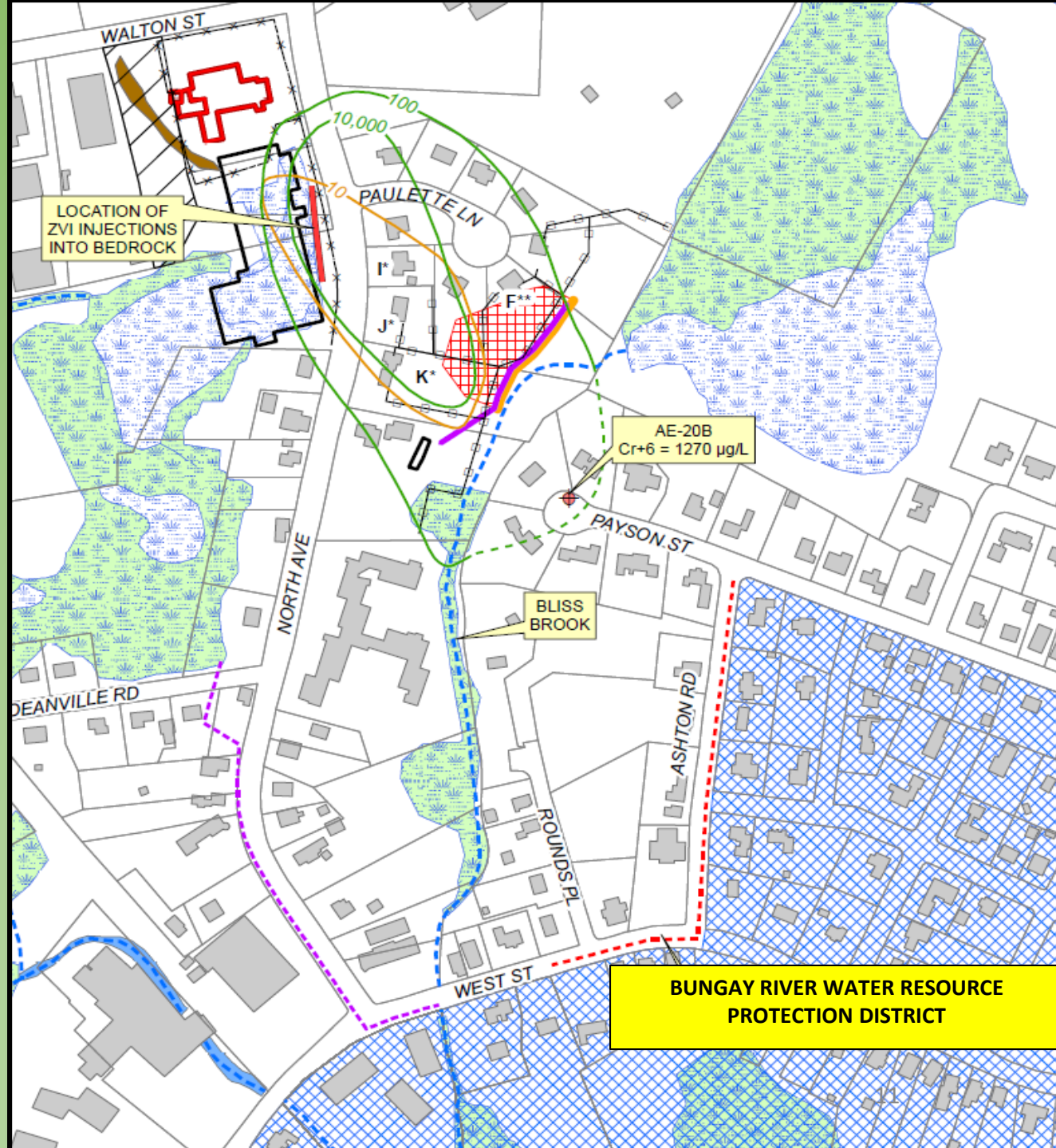


FIGURE 1-7.
HEXAVALENT CHROMIUM IN
BLISS BROOK SURFACE WATER

Groundwater Use & Value

- Public water supply available, no existing private water wells within Site Review Area
- Orrs Pond and Bungay River Water Resource Protection Districts
  - Bungay River Water Resource Protection District within Site Review Area
- Extent of groundwater contamination within Protection District not defined
  - Elevated hexavalent chromium concentrations in bedrock groundwater upgradient of district
- If the District is impacted by the Site, groundwater cleanup may be necessary

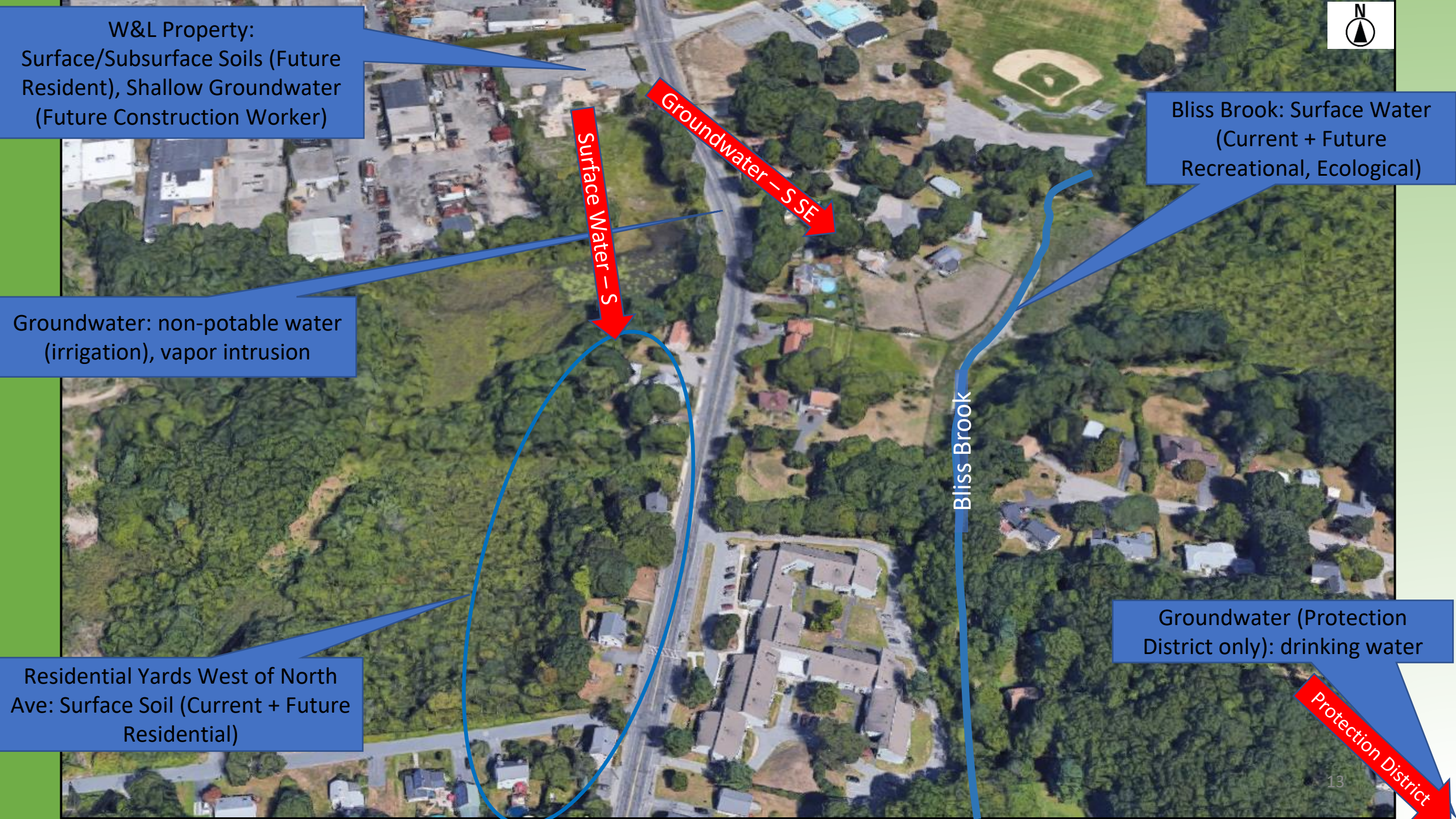


Risk Assessment Summary

Exposure Point and Medium	Scenario/Receptor	Major Contributors to Risk (Chemicals of Concern)
Bliss Brook – Surface Water (area where plume is discharging)	Human Health: Current and Future Recreational Users	Hexavalent chromium (Cr+6)
	Ecological: Aquatic invertebrates, amphibians, fish	Cr+6
W&L Property – Surface/Subsurface Soil	Human Health: Future Residents*	Cr+6, PAHs, several other metals
Residential Yards West of North Avenue – Surface Soil	Human Health: Current and Future Residents	Lead
W&L Property – Shallow Groundwater	Human Health: Future Construction Worker	Cr+6
Groundwater	Human Health: If groundwater is used as drinking water**	Cr+6, cVOCs, 1,4-dioxane, other metals
	Human Health: If Site groundwater is used for non-drinking water uses (i.e. irrigation, filling of pools, etc.)	Cr+6, TCE, vinyl chloride
	Human Health: Potential for vapor intrusion in structures located above/near plume (certain areas only, if no vapor mitigation system is present to prevent vapor intrusion)	cVOCs

*Hypothetical future residential scenario – the current and reasonably anticipated future land use of the W&L property is commercial/industrial

**Groundwater Use and Value Determination indicates a low value for groundwater use as a drinking water source, except within the Bungay River Water Resource Protection District, where a medium determination has been made and action is potentially needed to restore impacted groundwater within that District to meet drinking water levels. Groundwater has also been assigned a high value due to its contribution to the adjacent wetlands and Bliss Brook (MassDEP, 2018).


W&L Property:
Surface/Subsurface Soils (Future Resident), Shallow Groundwater (Future Construction Worker)
Groundwater – S SE
Surface Water – S
Bliss Brook: Surface Water (Current + Future Recreational, Ecological)
Groundwater: non-potable water (irrigation), vapor intrusion
Bliss Brook
Groundwater (Protection District only): drinking water
Residential Yards West of North Ave: Surface Soil (Current + Future Residential)
Protection District
N

Feasibility Study

- Determines site-specific cleanup levels
- Determines area and volume of media requiring cleanup
- Identifies and screens potential cleanup technologies
- Develops potential cleanup alternatives
- Conducts detailed evaluation and comparison of cleanup alternatives

Feasibility Study – Evaluation Criteria

Nine Criteria Evaluation for Cleanup Selection	
Threshold	➢ Overall protection of human health and environment ➢ Compliance with Applicable or Relevant and Appropriate Requirements (ARARS)
Balancing	➢ Long-term effectiveness and permanence ➢ Reduction of toxicity, mobility, or volume through treatment ➢ Short-term effectiveness ➢ Implementability ➢ Cost
Modifying	➢ **State acceptance** ➢ **Community acceptance → 30-day comment period, formal hearing**

Feasibility Study – Cleanup Alternatives

General Response Action	Remedial Technology
No Action	Required as a baseline to compare to other actions
Limited Action	Use/access restrictions (institutional controls)
	Monitoring (groundwater, surface water, etc.)
Containment	Capping
Removal	Excavation (off-site disposal)
Treatment: *in-situ*	Chemical reduction
	Permeable reactive barriers
	Biological processes (natural attenuation)
Treatment: *ex-situ*	Pump and treat system

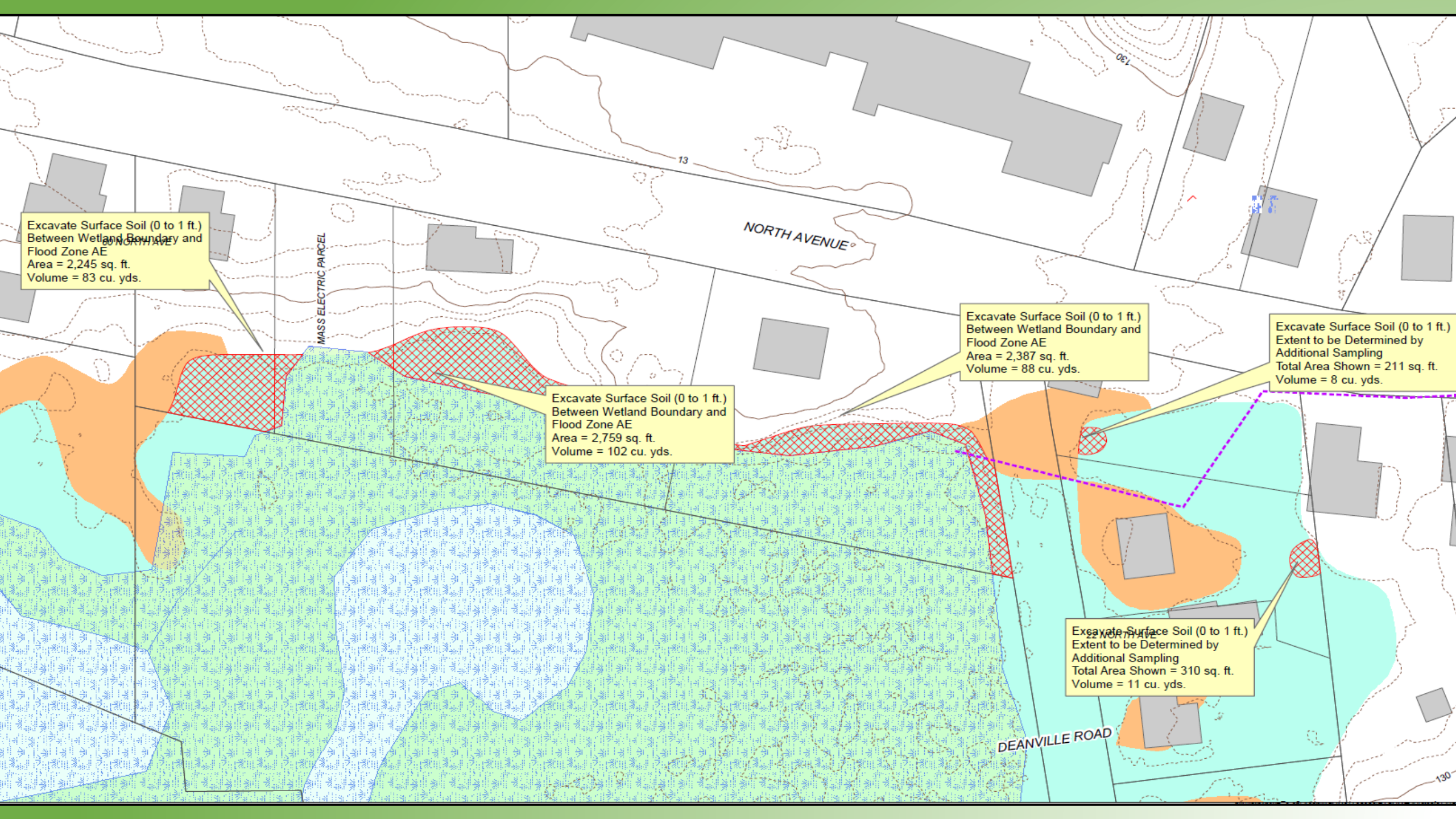
Alternative by Media

- Soil in Residential Yards West of North Avenue
- Groundwater / Surface Water (Source Control)
- Bedrock Groundwater

Soil in Residential Yards West of North Avenue
Preferred Alternative:

Alternative SL-3: Soil Excavation in Residential Yards

- Soil excavation (310 cubic yards) with off-site disposal
  - 100-year flood zone only (between wetlands and upland soil)
- Pre-design investigation to determine vertical extent of contamination
- EPA is pursuing options to expedite this portion of the cleanup


Excavate Surface Soil (0 to 1 ft.)
Between Wetland Boundary and
Flood Zone AE
Area = 2,245 sq. ft.
Volume = 83 cu. yds.
Excavate Surface Soil (0 to 1 ft.)
Between Wetland Boundary and
Flood Zone AE
Area = 2,759 sq. ft.
Volume = 102 cu. yds.
Excavate Surface Soil (0 to 1 ft.)
Between Wetland Boundary and
Flood Zone AE
Area = 2,387 sq. ft.
Volume = 88 cu. yds.
Excavate Surface Soil (0 to 1 ft.)
Extent to be Determined by
Additional Sampling
Total Area Shown = 211 sq. ft.
Volume = 8 cu. yds.
Excavate Surface Soil (0 to 1 ft.)
Extent to be Determined by
Additional Sampling
Total Area Shown = 310 sq. ft.
Volume = 11 cu. yds.
NORTH AVENUE
80 NORTH AVE
22 NORTH AVE
MASS ELECTRIC PARCEL
DEANVILLE ROAD
13
130

Groundwater / Surface Water
Preferred Alternative:

Alternative GW/SW-3b: Source Area Soil Removal with *in-situ* Soil Treatment and Extension of Permeable Reactive Barrier, with Mid-plume Treatment

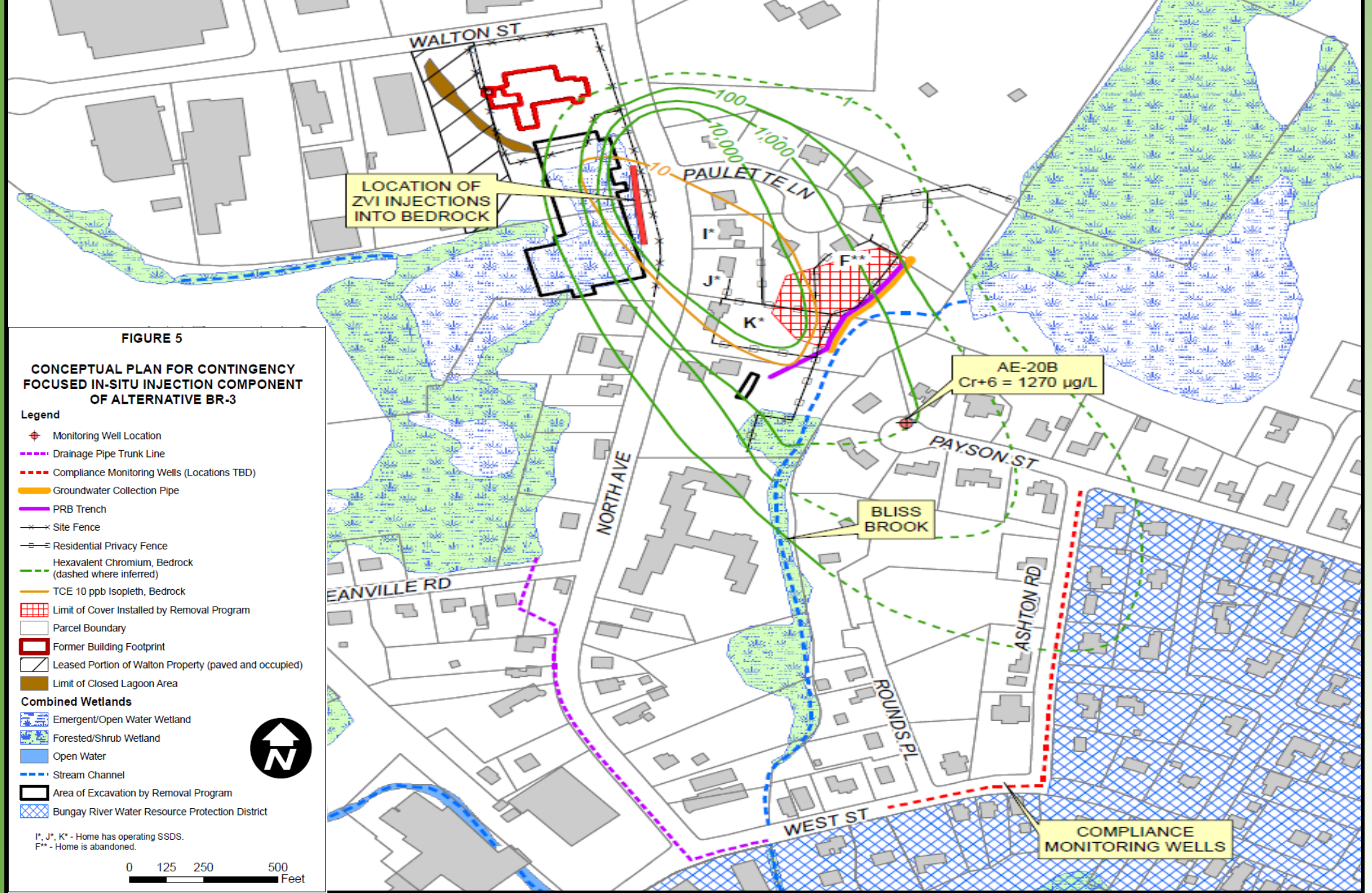
- Removal and off-site disposal of remaining facility floor slab
- Soil excavation (7,900 cubic yards) and off-site disposal
- *In-situ* soil treatment within excavation area – soil blending with ZVI
- Extension of existing PRB adjacent to Bliss Brook to fully capture and treat contaminated groundwater prior to discharge into the brook
  - Soil excavation (4,400 cubic yards) and off-site disposal
- Mid-plume *in-situ* soil treatment
- Monitoring – groundwater, surface water, vapor intrusion pathway
- Operation and Maintenance
- Institutional Controls
- Five-Year Reviews


Removal, off-site disposal of remaining facility features
W&L Property
Monitoring
Operation & Maintenance
Institutional Controls
Five-Year Reviews
Soil excavation, off-site disposal; *in-situ* soil treatment
Paulette Lane
Existing PRB
North Avenue
Mid-plume *in-situ* treatment (injection wells)
Bliss Brook
Extension of permeable reactive barrier

Bedrock Groundwater
Preferred Alternative:

Alternative BR-3: Institutional Controls with Contingency Remedy of Focused *in-situ* Injections (West of North Avenue)

- Institutional Controls – prevent contact with contaminated groundwater (well installation)
- Additional pre-design investigations to determine extent of potential impact within the Bungay River Water Resource Protection District
- Monitoring of bedrock groundwater
- Contingency remedy: implementation of focused *in-situ* injections


WALTON ST
LOCATION OF ZVI INJECTIONS INTO BEDROCK
100
1
10,000
1,000
10
PAULETTE LN
I*
J*
K*
F**
AE-20B
Cr+6 = 1270 µg/L
PAYSON ST
BLISS BROOK
NORTH AVE
EANVILLE RD
ASHTON RD
ROUNDS PL
WEST ST
COMPLIANCE MONITORING WELLS
FIGURE 5
CONCEPTUAL PLAN FOR CONTINGENCY FOCUSED IN-SITU INJECTION COMPONENT OF ALTERNATIVE BR-3
Legend
Monitoring Well Location
Drainage Pipe Trunk Line
Compliance Monitoring Wells (Locations TBD)
Groundwater Collection Pipe
PRB Trench
Site Fence
Residential Privacy Fence
Hexavalent Chromium, Bedrock (dashed where inferred)
TCE 10 ppb Isopleth, Bedrock
Limit of Cover Installed by Removal Program
Parcel Boundary
Former Building Footprint
Leased Portion of Walton Property (paved and occupied)
Limit of Closed Lagoon Area
Combined Wetlands
Emergent/Open Water Wetland
Forested/Shrub Wetland
Open Water
Stream Channel
Area of Excavation by Removal Program
Bungay River Water Resource Protection District
N
I*, J*, K* - Home has operating SSDS.
F** - Home is abandoned.
0 125 250 500 Feet

Preferred Alternative Cost Summary

Preferred Alternative	Capital Cost	Annual O&M	Net Present Value (first 30 years)
Soil in Residential Yards West of North Ave (SL-3)	$422,000	$0	$422,000
Groundwater/Surface Water (GW/SW-3b)	$12,572,000	$161,000	$16,573,000
Bedrock Groundwater (BR-3) – ICs, PDI, Monitoring	$963,000	$124,000	$4,379,000
BR-3 Contingency	$608,000	$0 (included above)	$927,000
	Total (does not include BR-3 contingency)		
	$13,957,000	$285,000	$21,374,000

Next Steps

- Public Hearing tonight – 7:30pm
  - EPA accepts comments only
- Ongoing 30-day Public Comment Period
  - July 26 – August 26
- Record of Decision – September
  - Memorializes cleanup plan
  - Responds to public comments
- Begin Cleanup Design (Remedial Design)
  - Typically 1-2 year process
- Implement Cleanup (Remedial Action)

Additional Information

Provide EPA with comments on the Proposed Plan either verbally during the Public Hearing at 7:30pm tonight, or by submitting written comments by email, fax, or U.S. mail post-marked no later than August 26, 2019 to:

Ethan Finkel
EPA Region 1 – New England
5 Post Office Square, Suite 100
Boston, MA 02109-3912

Email: finkel.ethan@epa.gov
Fax: 617-918-0293

Copies of the site documents and EPA's Proposed Plan can be found online at:

- www.epa.gov/superfund/walton
- In person at the following locations:

EPA Records and Information Center
5 Post Office Square, First Floor
Boston, MA 02109
617-918-1440

Attleboro Public Library
74 North Main Street
Attleboro, MA 02703
508-222-0157